MARCH 10, 1937 NUMBER 317

THE UNIVERSITY OF NORTH CAROLINA RECORD

THE ONE HUNDRED AND FORTY-THIRD SESSION

CATALOGUE OF THE SCHOOL *of* PHARMACY

1936-1937

Announcements for the Session

1937-1938

THE UNIVERSITY OF NORTH CAROLINA PRESS
ISSUED 12 TIMES A YEAR AS FOLLOWS: 4 NUMBERS IN FEBRUARY, 3 NUMBERS IN MARCH, 3 NUMBERS IN APRIL, 1 NUMBER EACH IN JUNE AND OCTOBER
ENTERED AS SECOND-CLASS MATTER AT THE POSTOFFICE AT
CHAPEL HILL, N. C.
UNDER THE ACT OF AUGUST 24, 1912

CATALOGUE OF EVENTS

1937	
June 10-July 21	Summer Session, First Term.
July 22-August 28	Summer Session, Second Term.
September 13	*Monday.* Entrance Examinations.
September 13-14	*Monday and Tuesday.* Examinations to remove condition grades.
September 13-16	*Monday through Thursday.* Freshman Week and Registration.
September 15	*Wednesday.* Registration of first year students for the fall quarter.
September 16	*Thursday.* Registration of all students except first year students for the fall quarter.
September 17	*Friday.* Class work for the fall quarter begins.
October 12	*Tuesday.* University Day.
November 24	*Wednesday.* Thanksgiving Recess begins (1:00 p.m.).
November 29	*Monday.* Thanksgiving Recess ends (8:30 a.m.).
December 9-18	*Thursday to 1:00 p.m. Saturday of following week.* Registration for the winter quarter.
December 14-18	*Tuesday through Saturday.* Examinations for the fall quarter.
December 18 (afternoon)-January 2, 1938	Christmas Recess.
1938	
January 3	*Monday.* Registration of new students.
January 4	*Tuesday.* Class work for the winter quarter begins.
March 4-12	*Friday to 1:00 p.m. Saturday of following week.* Registration for the spring quarter.
March 8-12	*Tuesday through Saturday.* Examinations for the winter quarter.
March 13-20	*Sunday through Sunday.* Spring Recess.
March 21	*Monday.* Registration of new students.
March 22	*Tuesday.* Class work for the spring quarter begins.
May 30-June 3	*Monday through Friday.* Examinations for the spring quarter.
June 5-7	*Sunday through Tuesday.* Commencement Exercises.

INFORMATION PERTAINING TO THE GENERAL UNIVERSITY

The School of Pharmacy is one of the divisions of the University of North Carolina, located at Chapel Hill. It is governed by the same administration, the same board of trustees, the same laws and regulations as the rest of the University. Its students enjoy all of the privileges of the institution and are subject to all general regulations.

Candidates for admission are received by certificate from accredited schools or by examination. Each application for admission must be passed upon and approved by the Dean of Admissions of the University before the application can be considered.

STUDENT GOVERNMENT

The student body of the University is self-governing. The functions of this government are both disciplinary and constructive. The functions are exercised by the Student Council which is elected by the student body. The School of Pharmacy is represented on this council by a member of the fourth-year class. Student government, in so far as it is disciplinary, is based upon the honor principle. No code of rules is laid down to direct a student what to do and what not to do. The only standards are those of morality and gentlemanly conduct, and obedience to the laws of North Carolina. The Student Council has power to suspend or dismiss a student from the University, but the final and supreme power is in the general university faculty, delegated to it by the Board of Trustees.

RELIGIOUS INFLUENCES

Through the coöperation of all concerned, religious influences of unusually effective character surround the University student. Chapel exercises are held in Memorial Hall at ten-thirty o'clock. The Young Men's Christian Association, to which the University makes annual contributions, is of great value in the life of the campus.

The larger denominations of the State have erected in Chapel Hill modern and adequate church plants. The Chapel Hill churches are manned by an effective and coöperative group of pastors, are all located in close proximity to the campus, and play a very large and genuine part in the life of the University.

WITHDRAWALS

Formal withdrawal, which is prerequisite to honorable dismissal or reëntrance to this institution, to be valid must be approved by the student's Dean. Such a withdrawal will be approved only after full investigation of the circumstances and after a lapse of twenty-four

hours from the time the first application is filed with the Dean. The withdrawal form after approval by the Dean must be filed promptly with the Recorder in room 8 in the South Building.

If a student withdraws after the mid-term and is reported as below passing in two or more courses, that quarter will be counted as a quarter in residence in all computations of his requirements for readmission. If a student withdraws before mid-term, it will be left to the discretion of the Dean as to whether or not that quarter is to be counted as a quarter in residence. The Dean's verdict will be indicated specifically on the form used for withdrawal.

HEALTH AND RECREATION

The health of the student community is cared for by the maintenance of a properly appointed infirmary with a staff of well trained physicians and nurses. The university gymnasium and five large athletic fields provide ample facilities for exercise and recreation, all under the supervision and direction of a well organized Department of Physical Education.

LIBRARIES

In addition to the specialized departmental and school libraries the general university library, containing over three hundred and thirty thousand volumes, offers its opportunities to members of all divisions of the institution.

LOCATION

Chapel Hill is thirty miles west of Raleigh, the capital of the State, in the beautiful Piedmont section of hills and forests. It can be reached from every point by paved roads. Its environment of natural beauty and simple culture, of age and traditions, is impressive. The University of North Carolina, the first state university to open its doors in America and a member of the Association of American Universities, is recognized as a leader among educational institutions.

THE SCHOOL OF PHARMACY

Frank Porter Graham, M.A., LL.D., D.C.L., D.Litt., *President*
Robert Burton House, A.M., *Dean of Administration*
*John Grover Beard, Ph.G., Ph.M., *Dean*

**THE ADMINISTRATIVE BOARD

William deBerniere MacNider, M.D., Sc.D., LL.D.
Dudley deWitt Carroll, M.A.
Henry Roland Totten, Ph.D.
Henry Matthew Burlage, Ph.D.
Ira Winfield Rose, Ph.G.
Marion Lee Jacobs, Ph.C., M.Sc.
Ralph Walton Bost, Ph.D.

SPECIAL STAFF

William deBerniere MacNider, M.D., Sc.D., LL.D., *Kenan Research Professor of Pharmacology.*
Dudley deWitt Carroll, M.A., *Professor of Economics and Dean of the School of Commerce.*
*John Grover Beard, Ph.G., Ph.M., *Professor of Materia Medica and Dean of the School of Pharmacy.*
Robert Ervin Coker, Ph.D., *Professor of Zoölogy.*
John Wayne Lasley, Jr., Ph.D., *Professor of Pure Mathematics.*
Henry Roland Totten, Ph.D., *Professor of Botany.*
James Talmadge Dobbins, Ph.D., *Professor of Chemistry.*
Henry Matthew Burlage, Ph.D., *Professor of Pharmacy.*
Arthur E. Ruark, Ph.D., *Professor of Physics.*
Arthur Palmer Hudson, Ph.D., *Professor of English.*
Edward Mack, Jr., Ph.D., *Smith Professor of Chemistry.*
†Ralph William Clark, Ph.D., *Professor of Materia Medica.*
Malcolm Dean Taylor, A.B., M.B.A., *Associate Professor of Marketing.*
Almonte Charles Howell, Ph.D., *Associate Professor of English.*
Ira Winfield Rose, Ph.G., *Associate Professor of Practical Pharmacy.*
Marion Lee Jacobs, Ph.C., M.Sc., *Associate Professor of Pharmaceutical Chemistry.*
Grant Lester Donnelly, A.B. in Educ., M.D., *Associate Professor of Pharmacology.*
Ralph Walton Bost, Ph.D., *Associate Professor of Chemistry.*
William Anderson Olsen, A.M., *Assistant Professor of English.*
Joseph Edison Adams, Ph.D., *Assistant Professor of Botany.*
William Reese Lloyd, A.B., B.S. (Phar.), *Graduate Assistant in Pharmacy.*

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* Absent on leave, winter and spring quarters, 1936-1937; his place during these quarters is supplied by Professor I. W. Rose as Acting-Dean.

** The Dean of Administration, the Registrar, and the Dean of Students are *ex officio* members of each Administrative Board.

† Appointment for winter and spring quarters, 1936-1937.

HISTORICAL SKETCH

In 1880 Dr. Thomas W. Harris was instrumental in establishing a School of Pharmacy at the University in connection with the School of Medicine. Doctor Harris was Professor of Anatomy, Materia Medica, and Pharmacy. The course in pharmacy extended over two sessions of five months each, and led to the degree of Graduate in Pharmacy (Ph.G.). The school was continued until the resignation of Doctor Harris in 1886, when it was abandoned. In the fall of 1889 the school was revived by Dr. Richard H. Whitehead, but again its career was cut short. Finally, in March, 1897, in response to an urgent request previously presented by the North Carolina Pharmaceutical Association, the present school was established upon a firm foundation and Edward Vernon Howell was appointed Professor of Pharmacy and Dean. The early course of studies extended over two sessions of nine months each and led to the degree of Graduate in Pharmacy (Ph.G.).

The School has gradually increased its staff and its laboratory and library facilities; it has advanced its minimum degree offerings from two to three and in 1932 to four years of study; it secured membership in the American Association of Colleges of Pharmacy in 1917; and obtained the exclusive use of its present building (Howell Hall of Pharmacy) in 1925. The building contains 35 rooms, 22,000 sq. ft. of floor space, and provides space for a departmental library and reading room, an auditorium, and a modern dispensing laboratory. The latter was provided in 1935 as a gift from an alumnus. Howell Hall is located in the northeast section of the campus, adjacent to the Arboretum, the Medicinal Plant Gardens, and the Biology building (Davie Hall).

The University of the State of New York credits fully the four year's of work here as evidence of due preparation for the examinations of the licensing board in that state.

In 1933 the Graduate School of the University began offering a course of study with majors in three fields of pharmaceutical education which leads to the degree of Master of Science (S.M. in Phar.).

REQUIREMENTS FOR ADMISSION

Properly qualified applicants of either sex may be admitted to the School of Pharmacy, provided they meet the requirements for entrance. Their credentials are first submitted to the Associate Registrar of the University.

English	4 units	Plane Geometry	1 unit
*Social Science	1 unit	French or German or Latin	2 units
Algebra	1½ units	Electives to make total of	15 units

* Preferably the History of the United States.

EXPENSES

Tuition and Other Fees for Each Quarter

Each student whose *bona fide* residence has not been established in North Carolina for at least the six months prior to his first registration in the University must pay an extra fee of $33.34 for each fall, winter, or spring quarter he spends in residence. The residence of a minor is that of his parents or guardian. The residence of an adult remains with his parents or guardian unless he shall have independently set up his own.

Students in doubt about their residence status should appeal their cases in writing to the Dean of Administration, preferably in advance of registration.

	Residents of N. C.
Tuition	$28.34
*Matriculation	15.00
**Student Publications	2.30
Laundry Deposit	8.50
Student Union fee	1.00
Special Entertainment fee	1.00
Total for each quarter	$56.14

Delayed Registration: The penalty for delayed registration for any quarter is one month of strict attendance probation for each day of delay. Any student registering later than the time appointed for his registration must pay five dollars ($5.00) as an additional fee for his delayed registration. No appeal from either attendance probation or the late registration charge of five dollars will be granted, unless the delay is due to circumstances clearly beyond the student's control. Such an appeal must be made in writing to the Dean of Administration, must show clearly good and sufficient justification for the delay in registering, and must bear the approval of the Dean of the School of Pharmacy.

Laundry Deposit: Students will be required to send their washing to the University Laundry for which a deposit of $8.50 will be collected at the time of registration.

Laboratory Fees: Each student taking a laboratory course must pay, in addition to his tuition fee, a small fee for power or materials used in the laboratory. Please bear in mind that laboratory fees are levied upon each student according to the courses pursued. The fees for the various laboratory courses are shown in connection with the description of courses.

Graduation Fee. The graduation fee is $5.00 payable when application for the degree is made.

* This fee includes fee for physical education, the library fee, the fee for infirmary service, the fee for debates, the fee for registration costs, and membership fee in the Athletic Association.

** This fee includes the following items: Daily Tar Heel $1.28, Yackety Yack .54, Buccaneer .28, and Carolina Magazine .25.

PAYMENT OF BILLS

Bills for the fall quarter are payable at the time of registration. Bills for the winter and spring quarters are payable at the Business Office on the first class day of the quarter. Failure to pay or to make proper arrangements for payment results in the assessment of an extra fee of $5.00.

DORMITORY ACCOMMODATIONS FOR MEN

Accommodations for approximately fourteen hundred students are available in the University dormitories.

All rooms in the dormitories are completely furnished. Students will, however, provide their own pillows, bed linen (for single beds), blankets, and towels.

Room rent ranges from $5.25 to $10.00 a month for each occupant, the price depending upon the location of the room. This charge includes light, heat, and service. Rooms are leased for the scholastic year. The rooms in the University dormitories are assigned to students in the order of application.

The University reserves the right to require any student whom for any reason it considers an undesirable tenant to vacate a room in a University dormitory.

New students should apply to the Cashier of the University for a dormitory room and enclose with the application a deposit fee of $5.00.

In order to retain his room for the next scholastic year, a student must file with the Cashier before May 25 an application and a deposit of $5.00 as an option. Double rooms must be applied for by both intending occupants. The rooms thus applied for will be retained until September 1, when the first payment of rent is due. The $5.00 option deposit will be forfeited in case the applicant does not himself occupy the room and pay the rent. Rooms not applied for or made vacant by failure to pay at the proper date will be assigned in the order of application.

The right to occupy a room is not transferable and terminates with the expiration of the lease. Any attempt on the part of an occupant of a room to sell or transfer his right to occupancy shall be deemed a fraudulent transaction. The penalty for violating this rule shall be the forfeiture of the room by the new lessee.

The occupant of a room will be held directly responsible for any damage done to the furniture in his room or to the room.

No dogs shall be kept in the University dormitories. Breach of this regulation leads to forfeiture of the room.

RESIDENCE FOR WOMEN

The Cornelia Phillips Spencer Building is the dormitory for women. Women not living in their own homes are required to reside in the dormitory unless permission to live elsewhere is granted by the Adviser to Women, Mrs. M. H. Stacy. Ordinarily such permission is granted in exceptional cases only, and to graduate students.

Rooms in the dormitory are rented upon the basis of the full session but the bill is payable in two installments, September 1 and February 1. The rooms are completely furnished. Students will provide, however, pillows, bed linen (for single beds), blankets, and towels. All persons living in the dormitory are required to board there also.

The cost of room and board for the session is $283.00 if the student shares a double room, or $328.00 if the student occupies a single room. Details of the payments to be made for room and board may be found in the Handbook for Women Students or by correspondence with Mrs. M. H. Stacy.

APPLICATIONS FOR LOANS

Applications for loans should be made to the Student Loan Fund office as far in advance as possible. The funds are limited in amount and are loaned only on the security of two approved signatures and at the legal rate of interest.

SELF HELP

Every effort is made to provide needy students with various forms of work. To secure such positions the applicant should make every effort to present his case before May 15 to the University Self Help Bureau.

REGISTRATION

Students who expect to register for the first year class should be in Chapel Hill on September 13 and at once present themselves to the Dean of the School of Pharmacy in Howell Hall. The time between this date and formal registration is devoted to placement tests and to a systematic plan of getting new students thoroughly familiarized with their surroundings. All students begin their registration in Howell Hall.

Registration for credit for any course is limited to the first seven calendar days of a quarter, unless the late registration is approved by the instructor concerned, the Dean, and the special faculty of the School of Pharmacy.

ATTENDANCE

Regular class attendance is a student obligation; an unexcused absence is not recognized as a privilege. Absence from class for cause

may be excused. Such absences are classified as (a) *those due to participation in recognized University activities, as those of the Glee Club, Debating and Athletic teams, and the Playmakers, when occurring away from Chapel Hill, such excuses to be issued by the Assistant Registrar; (b) those due to actual illness, testified to within forty-eight hours by the physician who personally attended the student during such illness; and (c) those due to emergencies caused by extraordinary circumstances, when *excused by the Dean in advance.*

The maximum number of unexcused absences during any quarter shall not exceed the number of weekly meetings of the class, provided that a department may impose penalties for a smaller number. Any student who has incurred the maximum number of unexcused absences shall be placed on attendance probation, and in case of an additional unexcused absence from *any* class may be suspended from the University by the Dean. Before the decision is reached regarding the suspension the Dean shall confer with either or both the instructor and the head of the department in which the student has taken the maximum number of absences.

Absences immediately before or immediately after University holidays shall count as the maximum number described in the foregoing paragraph.

Any student who, without excuse, is absent from a quiz or examination at the appointed time thereof will not be permitted to make up this quiz or examination.

No student shall be given credit in the University for any course who has attended less than 75 per cent of the class meetings of such course during the quarter in which the course is offered.

EXAMINATIONS

Regular written examinations are required at the end of each quarter in all courses except those the nature of which is such as to make them unnecessary.

Special examinations may be taken by students, who have received the condition grade (E), at the period of the special examinations in September. Provided he has no conflict with a course regularly taken by him in the quarter such a student may take the examination with the class in the same subject at any regular quarter examination period within a year after he has made the grade E. A fourth year student who makes a grade of E in his last quarter of residence is allowed to take a special examination for removal of the E not earlier than three days after his last examination in that period of examinations. The grade E becomes F if the student fails to pass the reëxamination whether in September or at a regular period.

Under no circumstances may a student stand a special examination to remove a condition grade (E) between the first and the last class

* Such authorized leaves of absence must be secured in advance.

days in any quarter unless such examination is requested and approved by the instructor of the course and the Committee on Petitions of the School.

Special examinations for students who have been officially excused from regular examinations on account of sickness or have been absent on account of some necessary cause may be held at suitable times fixed by the Recorder and the instructors concerned. Such examinations must be taken within twelve (12) months of the date of absence.

To be entitled to take a special examination within a quarter, or at the September period, or at a regular quarter examination period, the student is required to file with the Recorder at least one week prior to the examination period a written notice that he desires to take such examination.

Students absent from an examination without an official excuse or present and failing to submit examination papers are reported "absent." This mark is equivalent in every respect to grade F or failure, and is so reckoned in the office of the Registrar.

Each student is required to subscribe his name to the following pledge or its equivalent on every paper: "I hereby certify that during this examination I have neither given nor received aid." The instructor should not report a grade for any student whose examination paper lacks this pledge.

Papers handed in at a special examination by students who have been officially excused from the regular examination will be graded; all others will be marked "passed" or "failed."

STANDING

At the close of each quarter reports of the standing of all students in all of their studies are sent to parents or guardians. The reports are based upon the following system of grading: A—Excellent, B—Good, C—Fair, D—Barely passed, E—Conditioned, F—Failed, or I*—Work Incomplete.

PROMOTIONS

A student must attain a grade of D to pass any course.

The right of appeal to the Committee on Petitions of the School of Pharmacy is allowed in respect to grading provided the appeal is made within three months.

Students of pharmacy, in order to be eligible to continue in the School, must qualify according to the following requirements: A first year student must pass at least five quarter hours in the fall quarter, at least ten quarter hours in the first two quarters, and by the end of

* The grade I may be converted into one of the other grades by completing within a period of twelve months such additional assignments as may be required by the instructor in the course. A grade of I not so converted becomes F.

the spring quarter at least twenty-five quarter hours, not fewer than five of which must be in the spring quarter. Thirty quarter hours are required if deficiencies are removed by correspondence or Summer Session work. All other students of pharmacy must pass at least ten quarter hours each quarter for three quarters or thirty-five quarter hours if deficiencies are made up as above stated.

Any student who is denied promotion or readmission but who offers evidence of extenuating circumstances is permitted to make a written appeal to the Committee on Petitions provided he does so within three days after he has been pronounced ineligible.

In addition to the above regulations the following rule applies to students in pharmacy: No student may be admitted to the third year if any first year subject has not been completed.

DESCRIPTION OF CURRICULA

The School of Pharmacy recognizes that its graduates may be expected to pursue one or another of three related but definitely different forms of pharmaceutical practice. They may become prescriptionists in or owners of retail drug stores; they may elect to enter the field of medicinal manufacture; or they may decide to establish technical laboratories or enter the U. S. Public Health Service. Each different form of effort requires a specialized type of training and the School has attempted to provide such specialization. Certain subject matter, however, is basically necessary regardless of what type of pharmaceutical career is to be followed and the School has accordingly set up a common course for its first and second year students. At the beginning of the third year specialization begins through the election by the student of his preferred group of studies taken from either of the curricula designated as A, B, or C.* The contents of each curriculum will be found on pages 13, 14.

By action of the Administrative Board of the School of Pharmacy the Dean of the School is authorized to allow substitutions of certain academic subjects for certain prescribed pharmaceutical courses in the cases of rising third year students who in his opinion have made such records as to warrant their acceptance after graduation into standard medical schools.

Curricula Leading to the Degree of Bachelor of Science in Pharmacy

In order to be recommended for the degree of Bachelor of Science in Pharmacy the student must have completed one of the four-year courses of study outlined below. A student who has completed one or more years of accredited work in a recognized school of pharmacy and submits satisfactory evidence of having completed the entrance requirements and courses equivalent to those prescribed in the curricu-

* Curriculum C will not be offered 1937-1938.

lum required for the degree of S.B. in Pharmacy, may be admitted with advanced standing and proceed for this degree. The minimum requirement of residence for a degree is a period of three quarters within a period of twelve months. A full year's work comprising at least forty-five quarter hours must be completed by a transferring student.

Curricula Leading to the Degree of S.B. in Pharmacy

First Year

Fall Quarter: Chemistry 4, English 1, Mathematics 1, Pharmacy 10.

Winter Quarter: Chemistry 5, English 2, Mathematics 2, Pharmacy 12.

Spring Quarter: Botany 41, English 3, Mathematics 3, Pharmacy 13.

Second Year

Fall Quarter: Chemistry 31, English 44, Zoölogy 41.

Winter Quarter: Botany 42, Materia Medica 51, Pharmacy 22.

Spring Quarter: Chemistry 42, Materia Medica 52, Pharmacy 23, Physiology 23.

CURRICULUM A

Third Year

Fall Quarter: †Economics 31, Materia Medica 53, Pharmaceutical Chemistry 62, Pharmacy 61.

Winter Quarter: †Economics 32, Pharmaceutical Chemistry 63, Pharmaceutical Chemistry 64.

Spring Quarter: English 51, Pharmaceutical Chemistry 65, Pharmacology 55.

Fourth Year

Fall Quarter: Pharmaceutical Chemistry 70, Pharmacy 90, Pharmacy 91, Elective.

Winter Quarter: Commerce 61 or 165, Pharmacy 92, Pharmacy 96, Elective.

Spring Quarter: Pharmacy 93, Pharmacy 97, Pharmacy 98, Elective.

CURRICULUM B

Third Year

Fall Quarter: Materia Medica 53, Pharmaceutical Chemistry 62, Pharmacy 61, Physics 21.

Winter Quarter: Pharmaceutical Chemistry 63, Pharmaceutical Chemistry 64, Pharmacy 95, Physics 22.

Spring Quarter: English 51, Pharmaceutical Chemistry 165, Pharmacology 55, Physics 23.

† These courses in Economics meet five hours a week.

Fourth Year

Fall Quarter: Chemistry 166, German 14, Pharmacy 91.

Winter Quarter: Botany 142, German 15, Pharmaceutical Chemistry 172, Pharmacy 92.

Spring Quarter: Pharmaceutical Chemistry 173, German 16, Pharmacy 98, Elective.

CURRICULUM C*

Graduate Work in Pharmacy

The degree of Master of Science in Pharmacy will be conferred upon students who have satisfactorily completed approved graduate work extending over not less than one year. This course is administered by the Graduate School and information concerning it may be obtained by addressing the Dean of the Graduate School.

†COURSES OF INSTRUCTION

Materia Medica and Pharmacology

23. PHYSIOLOGY (3).

A study of the functions of the normal human body and a consideration of how these functions are modified by the action of drugs. Laboratory experiments are conducted by the instructor to demonstrate the more important physiological reactions of the lower animals, frogs, turtles, and cats. *Three hours a week, spring quarter.* Professors MacNider, Donnelly.

51-52. MATERIA MEDICA (10). Prerequisite, Botany 41; corequisite, Botany 42.

The individual drugs of the United States Pharmacopoeia and the National Formulary are considered from the standpoint of their origin, history, appearance, structure, active principles, chief medicinal properties, official preparations, and doses. These drugs are grouped and studied according to the families to which they belong. Later they are classified into therapeutic groups, based on their action. Textbooks and references to be assigned. Lectures and recitations. *Five hours a week, winter and spring quarters.* Professors Beard, Clark.

53. MATERIA MEDICA (3). Prerequisite, Materia Medica 51-52.

This course is to be considered as a continuation of Materia Medica 51-52. In addition to a more comprehensive study of vegetable and chemical drugs, consideration is given to the animal and biological products which are used in therapeutics. Lectures and recitations. Textbook: Gershenfeld's *Bacteriology and Sanitary Science. Three hours a week, fall quarter.* Professors Beard, Clark.

55. PHARMACOLOGY (4). Prerequisite, Materia Medica 51-52, Physiology 23.

This course is concerned with the physiological and therapeutic action of drugs both upon man and upon lower animals. Prior to this work the student has completed Materia Medica 51-52 which is concerned with the study of the physical and chemical properties of drugs, their preparations, dosage, and a

* Not to be offered in 1937-1938.

† The numbers in parenthesis following the descriptive titles indicate the credit values of the courses counted in quarter hours.

brief statement of their effect. This course in Pharmacology is intended to amplify and give in a more detailed fashion an understanding of the way in which the drug acts in normal and in toxic quantities. A consideration of the biological standardization of drugs is also a part of this course. Textbook: Bastedo's *Materia Medica, Pharmacology, and Therapeutics. Three lecture and two laboratory hours a week, spring quarter. Leboratory fee, $5.00.* Professors MacNider, Donnelly.

391-392-393. RESEARCH IN MATERIA MEDICA AND PHARMACOGNOSY (15).

These advanced courses consist of laboratory work, conferences with the major professor, and library investigations relating to research. The professor in charge is responsible for the assignment and approval of the subject and character of the thesis. *One lecture and nine laboratory hours a week, fall, winter, and spring quarters. Laboratory fee, $10.00 a quarter.* Professors Beard, Totten.

Pharmaceutical Chemistry

62-63. ORGANIC PHARMACEUTICAL CHEMISTRY (12). Prerequisite, Chemistry 31.

A consideration of the aliphatic and aromatic series. Stress is placed on the compounds of pharmaceutical importance. *Three lecture and six laboratory hours a week, fall and winter quarters. Laboratory fee, $10.00 a quarter.* Professor Jacobs; Assistant.

64. INORGANIC PHARMACEUTICAL CHEMISTRY (5). Prerequisite, Chemistry 42.

A laboratory and lecture course designed to acquaint the student with the identification tests and general assays of the *United States Pharmacopoeia* and *National Formulary.* Textbook: Jenkins and DuMez's *Quantitative Pharmaceutical Chemistry. Two lecture and six laboratory hours a week, winter quarter. Laboratory fee, $5.00.* Professor Jacobs; Assistant.

65(71). ORGANIC PHARMACEUTICAL CHEMISTRY (4). Prerequisite, Pharmaceutical Chemistry 62-63, or equivalent.

A study of the more important medicinal plant products and synthetic drugs. The laboratory work will consist of the isolation, purification, and identification of plant constituents and also of the identification of the common synthetic drugs. *Two lecture and four laboratory hours a week, spring quarter. Laboratory fee, $7.50.* Professor Jacobs; Assistant.

70. BLOOD AND URINE ANALYSIS (3½). Prerequisite, Chemistry 42.

This course is designed to acquaint the student with the qualitative and quantitative analysis of blood and urine. Reference: Hawk and Bergeim's *Physiological Chemistry. Two lecture and three laboratory hours a week, fall quarter. Laboratory fee, $4.00.* Professor Jacobs; Assistant.

165. (171). ORGANIC PHARMACEUTICAL CHEMISTRY (5). Prerequisite, Pharmaceutical Chemistry 62-63, or equivalent.

A study of the more important medicinal plant products and synthetic drugs. The laboratory work will consist of the isolation, purification, and identification of plant constituents and the synthesis of simple organic medicinal compounds. *Two lecture and six laboratory hours a week, spring quarter. Laboratory fee, $10.00.* Professor Jacobs; Assistant.

172. PHARMACEUTICAL ANALYSIS (5). Prerequisite, Pharmaceutical Chemistry 64.

A laboratory course supplemented by lectures emphasizing the more ad-

vanced and special assay methods of the *United States Pharmacopoeia* and *National Formulary. Two lecture and six laboratory hours a week, winter quarter. Laboratory fee, $10.00.* Professor Jacobs; Assistant.

173. FOOD AND DRUG ANALYSIS (5). Prerequisite, Pharmaceutical Chemistry 172.

A laboratory and lecture course dealing with the methods employed by government laboratories to control food and drug products. *Two lecture and six laboratory hours a week, spring quarter. Laboratory fee, $10.00.* Professor Jacobs; Assistant.

241-242-243. ADVANCED ORGANIC PHARMACEUTICAL CHEMISTRY (15). Prerequisite, Pharmaceutical Chemistry 62-63 or equivalent.

A study of the complex synthetic organic medicinal products. Their structure, synthesis, and properties are considered. *One lecture and eight laboratory hours a week, fall, winter, and spring quarters. Laboratory fee, $10.00 a quarter.* Professor Jacobs.

361-362-363. SEMINAR (3).

Required of all graduate students. *One hour a week, fall, winter, and spring quarters.* Members of the Staff.

391-392-393. RESEARCH IN PHARMACTUTICAL CHEMISTRY (15).

Statements regarding Materia Medica 391-392-393 apply to this course. *One lecture and nine laboratory hours a week, fall, winter, and spring quarters. Laboratory fee, $10.00 a quarter.* Professor Jacobs.

Pharmacy

10. PHARMACEUTICAL MATHEMATICS (3).

It is the purpose of this course so to relate arithmetic and other mathematics to pharmacy as to make certain that students can solve correctly the scientific problems encountered in dispensing as well as the merchandising calculations that arise in drug store practice. Textbook: Sturmer's *Pharmaceutical Arithmetic. Three hours a week, fall quarter.* Professor Beard.

11 (12). PHARMACEUTICAL LATIN (2).

A certain modicum of Latin is absolutely essential to the understanding of pharmaceutical terminology and to the proper handling of prescriptions. It is the purpose of this course to provide exactly that modicum. Textbook: Howe and Beard's *Latin for Pharmacists. Two hours a week, winter quarter.* Professor Beard.

12. PHARMACEUTICAL TECHNIQUE (4½).

Lectures deal with the theory and practice of pharmacy. The laboratory acquaints the student with the fundamental manipulations involved. Textbooks: *United States Pharmacopoeia; National Formulary. Three lecture and three laboratory hours a week, winter quarter. Laboratory fee, $3.00.* Professor Burlage; Assistants.

13. PHARMACEUTICAL TECHNIQUE AND PREPARATIONS (3½).

A continuation of Pharmacy 12 dealing with the more advanced theories and manipulations of pharmacy. Textbooks: *United States Pharmacopoeia; National Formulary. Two lecture and three laboratory hours a week, spring quarter. Laboratory fee, $4.00.* Professor Burlage; Assistants.

22. INORGANIC PHARMACY (5). Prerequisite, Chemistry 31, Pharmacy 13.

The official inorganic compounds are studied. The laboratory deals with the more important compounds and preparations involving chemical reactions. Textbooks: *United States Pharmacopoeia; National Formulary;* Rogers' *Inorganic Pharmaceutical Chemistry. Three lecture and four laboratory hours a week, winter quarter. Laboratory fee, $7.50.* Professor Burlage; Assistants.

23. GALENICAL PHARMACY (3). Prerequisite, Pharmacy 10, 13.

The official galenicals are studied in the lectures. The laboratory consists of the preparation of the more important types. Textbooks: *United States Pharmacopoeia; National Formulary. Two lecture and two laboratory hours a week, spring quarter. Laboratory fee, $4.00.* Professor Burlage; Assistants.

61. ADVANCED GALENICAL PHARMACY (5). Prerequisite, Pharmacy 23.

A continuation of Pharmacy 23 with emphasis on the more difficult official preparations, especially those made by maceration and percolation. Textbooks: *United States Pharmacopoeia; National Formulary; Recipe Book II. Three lecture and four laboratory hours a week, fall quarter. Laboratory fee, $10.00.* Professor Burlage; Assistants.

90. PARASITICIDES (3).

A course intended to supply information concerning the uses and methods of application of poisonous or inhibitory substances used as insecticides, fungicides, parasiticides, and rodenticides. *Three hours a week, fall quarter.* Professor Rose.

91-92. DISPENSING (10). Prerequisite, Pharmacy 61.

A study of the compounding and dispensing of prescriptions, including incompatibilities. Practice also is required in preparing capsules, pills, powders, ointments, etc., until work is satisfactory. *Two lecture and six laboratory hours a week, fall and winter quarters. Laboratory fee, $7.50 a quarter.* Professor Rose.

93. DISPENSING (3). Prerequisite, Pharmacy 91-92.

Continuation of Pharmacy 91-92. *One lecture and four laboratory hours a week, spring quarter. Laboratory fee, $5.00.* Professors Rose, Clark.

94. MANUFACTURING PHARMACY (3½). Prerequisite, Pharmacy 61.

The study and manufacture of pharmaceuticals, dentifrices, etc., with emphasis on the manipulation of machinery and apparatus used in the production of the same on a semi-commercial scale. *Two lecture and three laboratory hours a week, spring quarter. Laboratory fee, $7.50.* Professor Burlage.

95. HISTORY OF PHARMACY (3).

A course designed to develop the historical background and ethics of the profession. Reports will be required which will necessitate the use of the library and the preparation of bibliographies and reports on the important figures and historical developments in the profession. *Three hours a week, winter quarter.* Professor Burlage.

96. COMMERCIAL PHARMACY (3).

A practical consideration of retail store management and its problems. Executive control, organization, lay-out, merchandising, store policy, personnel, and other phases, including pharmaceutical jurisprudence, are dwelt upon. *Three hours a week, winter quarter.* Professors Rose, Clark.

97. ACCOUNTING PRINCIPLES (5).

A study of the fundamentals of double entry bookkeeping, covering the theory of debit and credit, closing the books, and construction of financial statements. Systems suitable for drug stores will be emphasized. *Three lecture and four laboratory hours a week, spring quarter.* Professor Rose.

98. NEW AND NON-OFFICIAL REMEDIES (3). Prerequisite, Pharmaceutical Chemistry 63.

A course designed to familiarize the student with the more important organic compounds and their preparations recognized in *New and Non-official Remedies.* Textbook: *New and Non-official Remedies. Three hours a week, spring quarter.* Professor Burlage.

99. THEORETICAL PHARMACY (5).

A course for fourth year students which is intended to bring together salient subject matter from materia medica, pharmaceutical chemistry, and pharmacy in order that highly important drugs may be studied from every angle. *Lectures and recitations, five hours a week, spring quarter.* Professor Beard.

191, 192, 193. CRITICAL STUDIES OF DISPENSING PROBLEMS, OFFICIAL PREPARATIONS, AND THEIR ASSAYS (5 each).

Two lecture and six laboratory hours a week, fall, winter, and spring quarters. Laboratory fee, $7.50. a quarter. Members of the Staff.

261-262-263. ADVANCED MEDICINAL PLANT PRODUCTS AND THEIR PREPARATIONS (15). Prerequisite, Pharmaceutical Chemistry 65 or equivalent.

A continuation of Pharmacy 162 with special emphasis on and problems dealing with the more complex medicinal plant products, with readings and discussions of the recent advances in this line of work. *Two lecture and six laboratory hours a week, fall, winter, and spring quarters. Laboratory fee, $10.00 a quarter.* Professor Burlage.

351-352-353. SEMINAR (3).

Required of all graduate students. Reports and discussions relating to recent advances in all branches of pharmacy and related sciences. *One hour a week, fall, winter, and spring quarters.* Members of the Staff.

391-392-393. RESEARCH IN PHARMACY (15).

Statements regarding Materia Medica 391-392-393 apply to this course. *One lecture and nine laboratory hours a week, fall, winter, and spring quarters. Laboratory fee, $10.00 a quarter.* Professor Burlage.

COURSES IN SERVICE DEPARTMENTS

Botany

41 GENERAL BOTANY (6).

An introduction to the structure and classification of plants. Lectures with laboratory and field work. *Four lecture and four laboratory or field trip hours a week, fall or spring quarter. Laboratory fee, $4.00.* Professors Coker, Totten, Couch; Assistants.

42. PHARMACEUTICAL BOTANY AND PHARMACOGNOSY (6). Prerequisite, General Botany.

A study of drug plants; the structure of their parts and contents; the localization and identification of crystals, starches, mucilages, gums, oils,

resins, glucosides, alkoloids, etc.; macroscopical and microscopical study and identification of crude drugs and their adulterants and some study and identification of their powders. *Three lecture and six laboratory hours a week, winter quarter. Laboratory fee, $4.00.* Professor Totten; Assistants.

142 (52). ADVANCED PHARMACOGNOSY (3). Prerequisite, General Botany and Botany 42.

Advanced work in the study of vegetable drugs; consideration of general methods employed in microanalysis of powdered drugs; preparation of materials for study; practical work in microanalysis of typical drugs and their adulterants and of mixtures. *One lecture and four laboratory hours a week, winter quarter. Laboratory fee, $4.00.* Professor Adams.

Chemistry

4-5. GENERAL CHEMISTRY (13).

An introduction to the study of the principal non-metallic and metallic elements and their compounds. *Five lecture and three laboratory hours a week, fall and winter quarters. Laboratory fee, $4.50 a quarter.* Professors Edmister, Markham, Smith; Assistants.

31. QUALITATIVE ANALYSIS (6). Prerequisite, Chemistry 1-2-3 or 4-5.

Laboratory work and lectures. *Three lecture and six laboratory hours a week, fall or spring quarter. Laboratory fee, $10.00.* Professors Dobbins, Markham; Assistants.

42. ELEMENTARY QUANTITATIVE ANALYSIS (6). Prerequisite, Chemistry 31.

Volumetric Analysis. Laboratory work, lectures, and stoichiometric exercises. *Three lecture and six laboratory hours a week, winter or spring quarter. Laboratory fee, $10.00.* Professors Dobbins, Markham; Assistants.

166. QUALITATIVE ORGANIC ANALYSIS (6). Prerequisite, Chemistry 61, 162, or equivalent.

A study of the theory of solubility, homology, class reactions, and the functional groups in organic compounds. Individual substances and complex mixtures are studied. *Three lecture and six laboratory hours a week, fall quarter. Laboratory fee, $10.00.* Professors Mack, Bost.

Commerce

61. SALES MANAGEMENT (5). Prerequisite or corequisite, Economics 31-32 or equivalent.

This course presents important problems of sales planning and administration from the point of view of the executive in charge of marketing. Among the general topics considered are: the relation of the sales department to other departments of the business; types of sales organizations; the selection, training, compensation, and management of the sales force; distribution policies including the choice of channels and agencies; sales research and market analysis; the determination of price and brand policies; the statistical control of sales operations; and the costs of distribution. Methods of preparing sales budgets are emphasized and budgets used by representative companies are examined. The distributive organization of several companies is studied critically. In the latter part of the course the problem method of instruction is used. *Five hours a week, winter quarter. Laboratory fee, $1.00.* Professor Taylor.

165. RETAIL DISTRIBUTION (5). Prerequisite, Economics 31-32.

A critical study is made of the general policies and practices of retail institutions such as unit stores, department stores, specialty stores, chain stores, voluntary chains, and mail order houses; and an attempt is made to develop the principles of retail distribution. Among the general topics considered are: elements of retail profit, types of retail institutions and types of merchandise, store location, store layout and merchandise classification, sales and service policies, merchandising, pricing policies, brand policies, relations with merchandise sources, and organization. Problems and cases form an important part of this course. *Five hours a week, winter quarter.* Professor Taylor.

Economics

31-32. GENERAL ECONOMICS (10). Not open to First Year students.

This course is planned to give a general understanding of the organization of our economic life and the fundamental principles underlying it. An analysis is made of production, distribution, and consumption, of the elements which determine value and price, with a brief introduction to money, banking and credit, monopoly, business combinations, labor problems, and economic reform. *Five hours a week, fall and winter quarters.* Professors Heer, Lear, Wolf, Bernstein, Cowden, Winslow; Messrs. Anderson, Bunting, Douty, Kuhlman, McFerrin.

English

1-2-3. FRESHMAN ENGLISH (9).

English 1 (fall) has for its object practical control of the sentence as a rhetorical unit and an understanding of the relation of sentence structure to paragraph structure. English 2 (winter) centers attention upon the paragraph and begins consideration of the technical problems of the longer theme. English 3 (spring) is devoted to study of the structure and style of the essay, and undertakes an approach toward the problems of literature courses. In all three quarters the student pursues directed reading, writes frequent themes, and has personal conferences with his instructor. *Three hours a week, throughout the year.* Professors Hudson (Chairman), McClamroch, Adams, Harry Russell, Bailey; Messrs. Horner, Wilson, Wells, Williams, McNeir, Grubb, Hartsell, Langston, Shackford, Svendsen, Robertson, Foster, Dagett, Lloyd, Clippard, Hawthorn, Wallace, Ohlman, Swedenberg.

44. PUBLIC SPEAKING: INTRODUCTORY COURSE (5).

Emphasis on organization of material, outlines, delivery, problems of attention and persuasion. Assigned reading in contemporary public problems as a basis for speaking. *Five hours a week, every quarter.* Professor Olsen.

51. ADVANCED COMPOSITION: Practical Exposition (5).

A course, primarily for students in the Schools of Commerce and Pharmacy, designed to give practice in writing the forms commonly used in the business world: letters, reports, professional papers, and articles for the press. *Five hours a week, spring quarter.* Professor Howell.

German

14-15-16. SPECIAL COURSE FOR ADVANCED STUDENTS (9).

A course for beginners open only to those who desire an introduction to a second foreign language and who give evidence of being especially well qualified for such study. *Three hours a week, through the year.* Dr. Coenen.

Mathematics

1-2-3. INTRODUCTORY MATHEMATICS (9).

A systematic development of the notion of function. First the algebraic functions, including the linear function, the quadratic function, the functions of higher degree, an account of associated equations and geometric loci, the rate of change of a function, functions changing at a given rate. Then transcendental functions, including the logarithmic and exponential functions with their rates of change and associated problems. Finally the trigonometric functions and their application to the solution of triangles. *Three hours a week for the year.* Professors Lasley, Hobbs, Browne, Mackie, Winsor, Linker, Hill, Hoyle, Garner; Messrs. Cameron, Garrett.

Physics

21-22-23. GENERAL PHYSICS (12). Prerequisite, Mathematics 1-2-3.

Part I. Mechanics of solids, liquids, and gases. Text: Foley, College Physics. *Two lecture, one discussion, and two laboratory hours a week, fall quarter. Laboratory fee, $2.75.*

Part II. Electricity and magnetism, heat. Text: see Part I. *Two lecture, one discussion, and two laboratory hours a week, winter quarter. Laboratory fee, $2.75.*

Part III. Completion of heat, sound, light. Text: see Part I. *Two lecture, one discussion, and two laboratory hours a week, spring quarter. Laboratory fee, $2.75.* Professor Fussler, Dr. Shearin; Assistants.

Note: All three parts must be completed in order to secure any credit.

Zoölogy

41. FUNDAMENTALS OF ANIMAL BIOLOGY (6).

Principles of biology; elements of anatomy, physiology, and classification of vertebrate animals. Dissection of frog and dogfish and study of tissues, as necessary for an understanding of the organization and functions of vertebrate animals and especially of man. *Four lecture and four laboratory hours a week, fall or winter quarter. Laboratory fee, $5.00.* Professors Coker, Costello; Assistants.

DRUG STORE EXPERIENCE

The North Carolina Board of Pharmacy requires of candidates for license to practice pharmacy evidence of not less than forty-eight months of practical drug store experience. However, it allows the work done in the pharmaceutical laboratories to count in lieu of drug store experience, such credit to be limited to thirty-six months. Up to this limit the college work counts month for month.

SCHOLARSHIPS

The scholarships listed below, valued at $85.00 each, are awarded only to worthy and needy students of pharmacy who subscribe to the reasonable requirements laid down by the donors. Application for them must be made to the Dean of the School of Pharmacy on or before July first.

RICHARDSON SCHOLARSHIPS. Three in number. Established by Messrs. H. S. and L. Richardson, of Greensboro.

COUNCIL SCHOLARSHIPS. Two in number. Established by Mr. C. T. Council, of Durham.

THE SCOTT DRUG COMPANY SCHOLARSHIP. Established by the Scott Drug Company, of Charlotte.

THE W. H. KING DRUG COMPANY SCHOLARSHIP. Established by the W. H. King Drug Company, of Raleigh.

THE JUSTICE DRUG COMPANY SCHOLARSHIP. Established by the Justice Drug Company, of Greensboro.

THE FAIRCHILD SCHOLARSHIP. Mr. Samuel W. Fairchild, of New York City, offers annually a competitive scholarship amounting to $500.00 in cash to the high school graduates of the United States who wish to follow pharmacy as a vocation. This scholarship will be awarded on the basis of a competitive examination given to candidates who are high school graduates and who have successfully finished at least three years' work in a school or college of pharmacy which is a member of the American Association of Colleges of Pharmacy. Each school, college, or department of pharmacy will be allowed and be limited to two candidates. Application for further information concerning this scholarship should be made to the Dean of the School of Pharmacy.

MEDALS AND PRIZES

LEHN AND FINK GOLD MEDAL. This medal is given annually by Lehn and Fink of New York City.

THE BUXTON WILLIAMS HUNTER MEDAL. A gold medal is offered annually by Mr. D. R. Davis, of Williamston, in honor of his uncle, Mr. Buxton Williams Hunter, of New Bern, and is awarded to that student who has shown outstanding qualities of leadership and scholarship and who has done the most conspicuous work in the Student Branch of the N. C. P. A.

THE F. W. HANCOCK PRIZE. A prize of a gold watch, suitably engraved, is offered annually by Mr. F. W. Hancock, of Oxford, to that member of the graduating class who has achieved the highest scholastic rating during four years of study.

THE A. PH. A. MEMBERSHIP PRIZE. A prize of a year's membership in the American Pharmaceutical Association is offered annually by Prof. H. M. Burlage to that member of the graduating class who has attained the highest scholastic and technical proficiency in the courses dealing with the theory and practice of pharmacy.

THE UNIVERSITY OF NORTH CAROLINA STUDENTS' BRANCH OF THE NORTH CAROLINA PHARMACEUTICAL ASSOCIATION

The University of North Carolina Students' Branch of the North Carolina Pharmaceutical Association was established in the spring of 1936. The aim of the organization is to unite the pharmacy students for mutual assistance, encouragement, and improvement, and to advance the science and art of pharmacy.

RHO CHI HONORARY SOCIETY

The Xi Chapter of Rho Chi, national honorary pharmaceutical society, was established at the University of North Carolina in 1929. Charters for chapters of this organization are granted only to groups in colleges that are members in good standing of the American Association of Colleges of Pharmacy. Eligibility for membership in the Society is based on high attainment in scholarship, character, personality, and leadership. All candidates selected for membership must have completed 102.5 quarter hours or the equivalent of college work, and they must be approved by the Dean of the School of Pharmacy. The Xi Chapter has established a loan fund for deserving students of pharmacy.